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Procedia Social and Behavioral Sciences 1 (2009) 1318–1326

Procedia
Social and Behavioral Sciences

World Conference on Educational Sciences 2009

An analysis on perceptions of managers on learning-oriented utilization levels of information technologies in firms of organized industry zones

Cemal Sezer*

University of Sakarya, Department of Business Administration, Esentepe Kampusu, Adapazarı, 54187 Sakarya, Turkey

Received October 23, 2008; revised December 17, 2008; accepted January 4, 2009

Abstract

This study discusses how Information Technologies (IT) in business organizations have been used as learning mediums and whether their utilization levels have differentiated any characteristics of the training and education function of HRM. The research is conducted via a questionnaire study within firms located in Adapazarı, Hendek, Düzce and Orhangazi Organized Industry Zones (OIZ) in Turkey. The questionnaires were filled out by authorised managers from the selected companies and the data were analyzed using SPSS and the findings were then discussed to reach the conclusions. 2008 Elsevier Science Ltd. All rights reserved.

Keywords: Business enterprise; hrm; information technology; learning; training and development.

1. Introduction

Information Technologies (IT) have entered into every aspects of our life and it has resulted in many changes. The visible effects of IT have been apparent in every parts of the social sciences like production, trade, tourism, health, education etc. (Tiwana, 2003; Gunesekaran & Gaughey, 2002; Lal, 2002). The ambiance of IT is due to some advantages such as low-cost and top-speed communication, practical information storage and information-share speed (Tiwana, 2003) It is known that these technologies affect the process, strategy and structure of business and firms (Schwaz, 2002; Lee & Kim, 1996) Learning activities in businesses, namely the function of the development and training of employees is not out of this effect. Nowadays it is suggested that not only should a business be an employment area but also it should be a learning environment (Drucker, 1992). The IT developments give significant oppurtinities and chances to carry out these requirements. Nowadays, using IT is adopted as a method to be presented as alternative training philosophy and techniques (Dewett & Jones, 2001). In today's rivalry business environment information (and knowledge) has become ıne of the most important components of any firm's

E-mail address: Csezer@sakarya.edu.tr.

1877-0428
doi:10.1016/j.sbspro.2009.01.233

strategy. However perception of the traditional education aims to improve the intelligence and skills of the employees. In other words, previous perceptions consider the learning in businesses as restricted with basic areas like accounting principles and marketing principles. But nowadays it is advanced as it increased the learning capacity of employees and organization as a way of information production and sharing; and as it has got the mental and behavioural change and evolution that they can achieve the things which they could not achieve in the past (Noe, 1999; Daft, 1998; Koçel, 2005; Vera & Crossan, 2003). Thus it is possible for progressive development of learning capacity and inteligence of organizations for future (Senge, 1990). Thus, individual learning is the essential element of organizational learning (Mc Elroy, 2003). But nowadays it is an indispensibality that the learning is not only important in the indivudual, group/ team and organizational levels. The interaction among these three dimensions are important as well. It is possible to suggest and show the dimensions and interaction of one with another as a general model related to learning-change and development can be seen below:

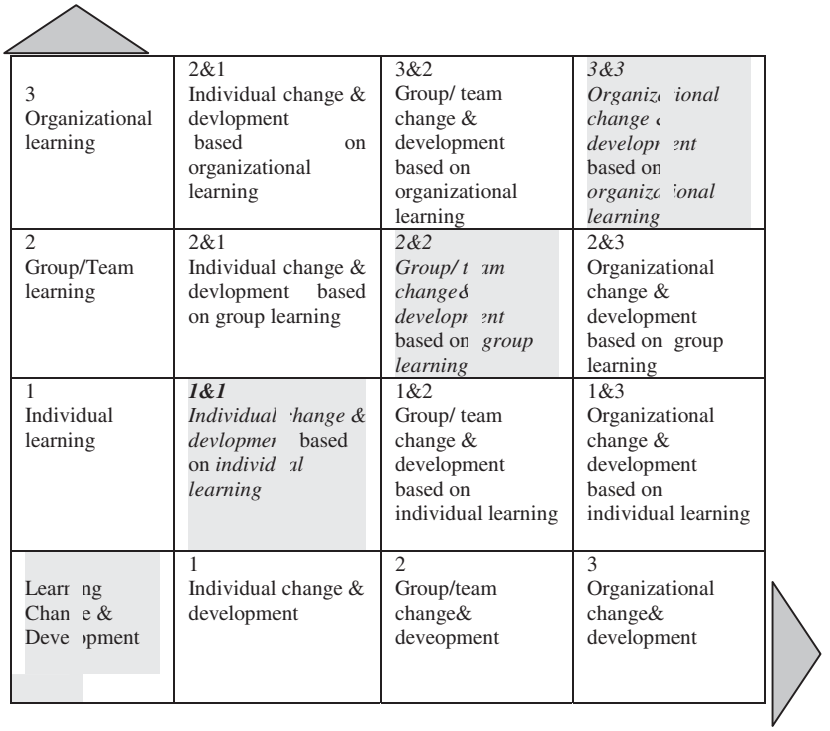

Fig. 1. Dimensions and interaction of learning and change - development in organizations

IT has a promising role in meeting the demands and necessities of SMEs as a means of education and learning. The rise in the figures of the firms who are in internet and intranet-based learning shows that the opportunities are considered by firms (Horton, 2000). Firms can use technology to related personal, group and organisational learning efforts. It is due to the fact that IT enables firms to optimize their procedures as well as advantages of high speed, low cost and better competition. In other words, IT provides the information and knowledge ready for recording, processing and sharing ready to use in firms (Tiwana, 2003).

The last development level of IT are enough to meet the learning needs of business especially SMEs that have limited capabilities and they gain speed advantage and simplicity on individual, group/ team, and organizational level learning. Furthermore it includes audio and visual image resources. But it is essential to gain rivalry advantage for the businesses which have IT, using this technology for being carrying out not only their routine works but also all functions and sub-functions of business and also decision-making. One of these functions is on the learning area related to the development and training function of HRM.

Generally the learning areas for a business can be categorized into three areas; basic, core-compentence and innovative learning areas. On the contrary to past, nowadays it is obvious that the determiners for the existence of business are not the basic learning areas but core compentence and innovative learning areas (Sezer, 2004). So it is

not significant any more that the development and training function in basic functions of HRM is carried out only via one period education programme which is developer of the basic skills. It manifests the learning comes strategic position in businesses. Nowadays it is strategical part that is supportive for work to education, teaching and learning; they have seen as one of the HRM techniques used in increasing the competitive effect and this is called high return education (Noe, 1999). The practice of high return education contributes to occur work conditions encouraging regular learning. So the business managers should take part for detecting learning needs actively: they provide that the employees work on problems in different work units simultanously and use internet or technology like grupware that allows sharing information (Noe, 1999). Today's rivalry conditions, become compulsory for following technological advancement and using appropriate IT to utilize from the information by the most effective way in terms of business (Eva, 2001; Bakos & Treacy, 1986). Learning described as increasing of knowledge capacity needs a positive change in cognitive, attitudional and behavioral dimensions in individual, group /team and organization. Positive change is knowing what indivudal, group and organization could not know previously, and it is progress and transferring into new condition that emphazises improving new attitudes and reaching to do capacity that they can't do. It is not a learning that cannot provide cognitive, attitudinal and/or behavioral change and development, it is only extravagancy of resource and wasted time.

Education area is one of the areas which IT enter into late in social life (Karslı & Gündüz, 2000). Businesses also have its share of this. Furthermore it can be said that HR development and training is the first function that more IT has to be utilized.

Thus, it is determined that many businesses use IT for carrying out routine works like accounting, whereas only one business uses for learning oriented in an inquiry in Adapazarı OIZ in 2003. (Sezer & Bayraktaroğlu, 2003). It will also be tested with this study as to see whether the situation has changed or not.

This research has some limitations such as it is based on the perceptions of managers in established business firms in Adapazarı, Hendek, Düzce and Orhangazi OIZs and study have following objectives:

- How is perceptions of managers related to learning oriented utilization level of information technologies within the firms ?

-Is there any relation between perceptions of managers related to learning oriented utilization levels of information technologies and firms' age, size, legal type, ownership, institutionalization, IT hardware- software facilities, having ISO certificate, having web site and having HR department ?

-Is there any relation between perceptions of managers related to learning oriented utilization leves of IT and utilization level of IT in payment, health and social security, performance appraisal, HR needs planning, personnel selection?

2. Research Methodology

2.1. Population and sample

The resarch population consists of all firms in Adapazarı, Hendek, Düzce and Orhangazi OIZs. This study drew total 85 firms and 47 samples were responded. The valid samples are 45 (52,9%).

The sample of this resarch is in established business firms all of (N=85) in Adapazarı (N=28), Hendek(N=17), Düzce(N=21) and Orhangazi(N=19) OIZs. The datas supplied to the firms and 45 responses were found suitable [(n=45), (39%); (Adapazari OIZ, n=11; Hendek OIZ, n=11; Düzce OIZ, n=14; Orhangazi OIZ, n=9)] and the data are analyzed.

2.2. Data gathering

A questionnaire is developed and conducted to determine the perceptions of managers on utilization levels of IT within firms. Only top managers were included in the data collection process. Two groups of questions were used; demographic variables and core research items.

2.3. Data analysis

At the end, the collected data were analyzed using SPSS statistical package. Reliability analysis (cronbach alpha coefficient) related to utilization level of IT in HR function (6 items) is computed (α=0.8567) which is quite coefficient (Kalaycı, 2005). Chi-Square Tests/ Fisher's Exact Test are also used for the analysis.

3. Results and Discussion

3.1. The frequncies of demographic characteristics of the firms

The frequncies of demographic characteristics of the firms are shown in Table 1. These are: participant of the questionnaire, firm numbers in the Organized Industry Zones, age of firm, size of firm, legal type of firm, institutionalization level of firm, IT hardware &software facilities of firm, having ISO certification, having web site and having HR department

Table 1. Frequencies of demographic characteristics

Demographic characteristics etc.		Frequency	Percent
Participant of questionnaire	Owner-manager	22	48,9
	Professional-manager	23	51,1
Firm numbers in OIZs	Adapazarı OIZ	11	24,4
	Hendek OIZ	11	24,4
	Düzce OIZ	14	31,1
	Orhangazi OIZ	9	20,1
Age of firms	0-9 age	19	42,2
	10-19 age	17	37,8
	20 and more	9	20,0
Size of firms	10-99 employee	34	75,6
	100 and more employee	11	24,4
Legal type of firms	Co.	13	28,9
	Limited. company	32	71,1
Firm ownerships	Family business	32	71,1
	Others	13	28,9
Institutionalization level of firms	Adequate	22	48,9
	Inadequate	23	51,1
IT hardware &software facilities	Adequate	37	82,2
	Inadequate	8	17,8
Having ISO certification	Yes	33	73,3
	No	12	26,7
Having web site	Yes	24	53,3
	No	21	46,7
Having HR department	Yes	21	46,7
	No	24	53,3

3.2. The Frequencies of the learning- oriented utilization level of IT and and other HRM functions of the firms

How are perceptions of managers related to learning-oriented utilization level of IT and and others HRM functions in the firms?

Table 2. The Frequencies of utilization level of IT in HRM functions

IT Utilization in HRM Functions		**Frequency**	**Percent**
IT Utilization in reward management	Adequate	38	**84,4**
	Inadequate	7	15,6
IT Utilization in health & social security	Adequate	37	**82,2**
	Inadequate	8	17,8

	Inadequate	9	20,0
IT Utilization in HR needs planning	Adequate	35	**77,8**
	Inadequate	10	22,2
IT Utilization in personal selection	Adequate	34	**75,6**
	Inadequate	11	24,4
IT Utilization in training & development	Adequate	30	**66,7**
	Inadequate	15	33,3

When we review these findings we can say that the IT utilization levels for HR functions seem quite high in general. IT usage in training and development looks still low as our measurement in 2003 study (Sezer & Bayraktaroğlu, 2003) but it is more promising. In reward management IT usage is the highest compared to other functions which also seems in line eith the previous 2003 study. In health and security functions as it is required by law it is quite common to use IT.

3.3. The relation between demographic characteristics and learning-oriented utilization level of IT in the firms

Is there a relation between perceptions of managers related to learning oriented utilization levels of IT and firms' age, size, legal type, ownership, institutionalization level, having HR department, having ISO certificate, IT hardware- software facilities and having web site ?

Table 3. The relation between demographics characteristics and learning oriented utilization level of IT

Chi-Square Tests	Value	df	Pearson Chi-Square (p)	Fisher's Exact Test (p)	Compare	Decission (İs there a relation?)
Factors						
Participant of the questionnaire	2,846	1	,092	**,120**	>0,05	No
OIZ	2,390	3	**,496**		>0,05	No
Age of the firm	2,687	2	**,261**		>0,05	No
Size of the firm	3,850	1	,050	**,070**	>0,05	No
Legal type of the firm	5,409	1	,020	**,034**	<0,05	**Yes**
Firm ownership	0,865	1	,352	**,492**	>0,05	No
Institutionalization level	4,447	1	**,035**	,057	<0,05	**Yes**
IT hard & software facilities	7,601	1	,006	**,11**	<0,05	**Yes**
Having ISO certification	,511	1	,475	**,496**	>0,05	No
Having website	6,429	1	**,011**	,025	<0,05	**Yes**
Having HR department	6,429	1	**,011**	,014	<0,05	**Yes**

To understand whether the questionnaire is reliable or not, the question is asked to the participants whether they are owner-managers or non-owner-managers. The type of the manager did not affect the results. Also there did not appear any relationship between the age of the firm and the location, the size, ownership and having ISO certificate with usage of IT in learning procedures. However, there were meaningfull relationships between legal type of firm, institutionalization level, IT hard & software facilities, having web site, having HR department and IT-based learning.

3.4. The relation between learning- oriented utilization level of IT and the other HRM functions in the firms

Is there a relation between perceptions of managers related to learning oriented utilization level of IT and utilization level of IT (ULIT) in reward management (RM), health and social security (HSS), performance appraisal (PA), HR needs planning (HRNP), personnel selection (PS)?

Chi-Square Tests Factors	Value	Df	Pearson Chi-Square (p)	Fisher's Exact Test (p)	comparison	Decision (is there a relation?)
ULIT-RM	10,235	1	,001	**,003**	<0,05	**Yes**
ULIT-HSS	3,725	1	,054	**,095**	>0,05	No
ULIT-PA	15,625	1	,000	**,000**	<0,05	**Yes**
ULIT-HRNP	18,579	1	,000	**,000**	<0,05	**Yes**
ULIT-PS	10,167	1	,001	**,003**	<0,05	**Yes**

Except from health and social security, other functions seem to be in relation with IT usage level in learning. The reason for health and social security may be the fact that firms only have to record the obligatory changes within the social security system.

4. Conclusions

According to the analysis of the questionnaires, it was found that IT usage for learning purposes is not affacted by the location, age, size, ownership and having ISO certificate. It shows that IT usage is not important only in large firms but also in SMEs. However, legal type of firm, institutionalization level, IT hard & software facilities, having web site, having HR department all have relationship with IT usage levels. The usage level of IT for learning purposes are interrelated with reward management, performance appraisal, HR needs planning and personnel selection function of HRM. It points out the fact that HRM functions are sub-systems and have close relationship with each other, or in other words HRM should be considered as a system in firms.

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Appendix A.

IT Utilization Level in Learning (IT-ULL) * Participant of Questionary (PQ) Crosstabulation

			PQ		Total
			Owner manager	Professional manager	
IT-ULL	Inadequate	Count	10	5	15
		Expected Count	7,3	7,7	15,0
	Adequete	Count	12	18	30
		Expected Count	14,7	15,3	30,0
Total		Count	22	23	45
		Expected Count	22,0	23,0	45,0

IT Utilization Level in Learning * Organized Industry Zone (OIZ)Crosstabulation

			OIZ				Total
			Adapazarı	Hendek	Düzce	Orhangazi	
IT-ULL	Inadequate	Count	3	2	6	4	15
		Expected Count	3,7	3,7	4,7	3,0	15,0
	Adequete	Count	8	9	8	5	30
		Expected Count	7,3	7,3	9,3	6,0	30,0
Total		Count	11	11	14	9	45
		Expected Count	11,0	11,0	14,0	9,0	45,0

IT Utilization Level in Learning * Age of Business/ Firm (ABF)Crosstabulation

			ABF			Total
			0-9 age	10-19 age	20 + age	
IT-ULL	Inadequate	Count	8	6	1	15
		Expected Count	6,3	5,7	3,0	15,0
	Adequete	Count	11	11	8	30
		Expected Count	12,7	11,3	6,0	30,0
Total		Count	19	17	9	45
		Expected Count	19,0	17,0	9,0	45,0

IT Utilization Level in Learning * Size of Business/ Firm (SBF) Crosstabulation

			SBF		Total
			100 +çalışan	0-99 çalışan	
IT-ULL	Inadequate	Count	1	14	15
		Expected Count	3,7	11,3	15,0
	Adequete	Count	10	20	30
		Expected Count	7,3	22,7	30,0
Total		Count	11	34	45
		Expected Count	11,0	34,0	45,0

IT Utilization Level in Learning * Type of Business/ Firm (TBF) Crosstabulation

			TBF		Total
			Co.	limited	
IT-ULL	Inadequate	Count	1	14	15
		Expected Count	4,3	10,7	15,0
	Adequete	Count	12	18	30
		Expected Count	8,7	21,3	30,0
Total		Count	13	32	45
		Expected Count	13,0	32,0	45,0

IT Utilization Level in Learning * Ownership Crosstabulation

			Ownership		Total
			Family Business	Others	
IT-ULL	Inadequate	Count	12	3	15
		Expected Count	10,7	4,3	15,0
	Adequete	Count	20	10	30
		Expected Count	21,3	8,7	30,0
Total		Count	32	13	45
		Expected Count	32,0	13,0	45,0

IT Utilization Level in Learning * Instutionilazition Level (IL) Crosstabulation

			Instutionilation Level		Total

			Inadequate	Adequete	
IT-ULL	Inadequate	Count	11	4	15
		Expected Count	7,7	7,3	15,0
	Adequete	Count	12	18	30
		Expected Count	15,3	14,7	30,0
Total		Count	23	22	45
		Expected Count	23,0	22,0	45,0

IT Utilization Level in Learning * HR Department Crosstabulation

			Having HR Department		Total
			Yes	No	
IT-LL	Inadequate	Count	3	12	15
		Expected Count	7,0	8,0	15,0
	Adequete	Count	18	12	30
		Expected Count	14,0	16,0	30,0
Total		Count	21	24	45
		Expected Count	21,0	24,0	45,0

IT Utilization Level in Learning * IT Hardware & Software Facilities (HSF)Crosstabulation

			HSF		Total
			Inadequate	Adequete	
IT-ULL	Inadequate	Count	6	9	15
		Expected Count	2,7	12,3	15,0
	Adequete	Count	2	28	30
		Expected Count	5,3	24,7	30,0
Total		Count	8	37	45
		Expected Count	8,0	37,0	45,0

IT Utilization Level in Learning * ISO Certificate Crosstabulation

			ISO Certificate		Total
			Yes	No	
IT-ULL	Inadequate	Count	10	5	15
		Expected Count	**11,0**	**4,0**	15,0
	Adequete	Count	23	7	30
		Expected Count	**22,0**	**8,0**	30,0
Total		Count	33	12	45
		Expected Count	33,0	12,0	45,0

IT Utilization Level in Learning * Having Web site Crosstabulation

			Web site		Total
			Yes	No	
İT-ULL	Inadequate	Count	4	11	15
		Expected Count	8,0	7,0	15,0
	Adequete	Count	20	10	30
		Expected Count	16,0	14,0	30,0
Total		Count	24	21	45
		Expected Count	24,0	21,0	45,0

IT Utilization Level in Learning * IT Utilizatiom Level in HR Needs Planing (HRNP) Crosstabulation

			HRNP		Total
			Inadequate	Adequete	
IT_ULL	Inadequate	Count	9	6	15
		Expected Count	3,3	11,7	15,0
	Adequete	Count	1	29	30
		Expected Count	6,7	23,3	30,0
Total		Count	10	35	45
		Expected Count	10,0	35,0	45,0

IT Utilization Level in Learning * IT Utilization Level in Personnel Selection (PS) Crosstabulation

			PS		Total
			Inadequate	Adequete	
IT-ULL	Inadequate	Count	8	7	15
		Expected Count	3,7	11,3	15,0
	Adequete	Count	3	27	30
		Expected Count	7,3	22,7	30,0

Total		Count	11	34	45
		Expected Count	11,0	34,0	45,0

IT Utilization Level in Learning * IT Uttilization Level in Performance Appraisal (PA) Crosstabulation

			PA		Total
			Inadequate	Adequete	
IT-ULL	Inadequate	Count	8	7	15
		Expected Count	3,0	12,0	15,0
	Adequete	Count	1	29	30
		Expected Count	6,0	24,0	30,0
Total		Count	9	36	45
		Expected Count	9,0	36,0	45,0

IT Utilization Level in Learning * IT Utilization Level in Reward Management (RM) Crosstabulation

			RM		Total
			Inadequate	Adequete	
IT-ULL	Inadequate	Count	6	9	15
		Expected Count	2,3	12,7	15,0
	Adequete	Count	1	29	30
		Expected Count	4,7	25,3	30,0
Total		Count	7	38	45
		Expected Count	7,0	38,0	45,0

IT Utilization Level in Learning * IT Utilization Level in Health&Security (HS) Crosstabulation

			HS		Total
			Inadequate	Adequete	
IT-ULL	Inadequate	Count	5	10	15
		Expected Count	2,7	12,3	15,0
	Adequete	Count	3	27	30
		Expected Count	5,3	24,7	30,0
Total		Count	8	37	45
		Expected Count	8,0	37,0	45,0